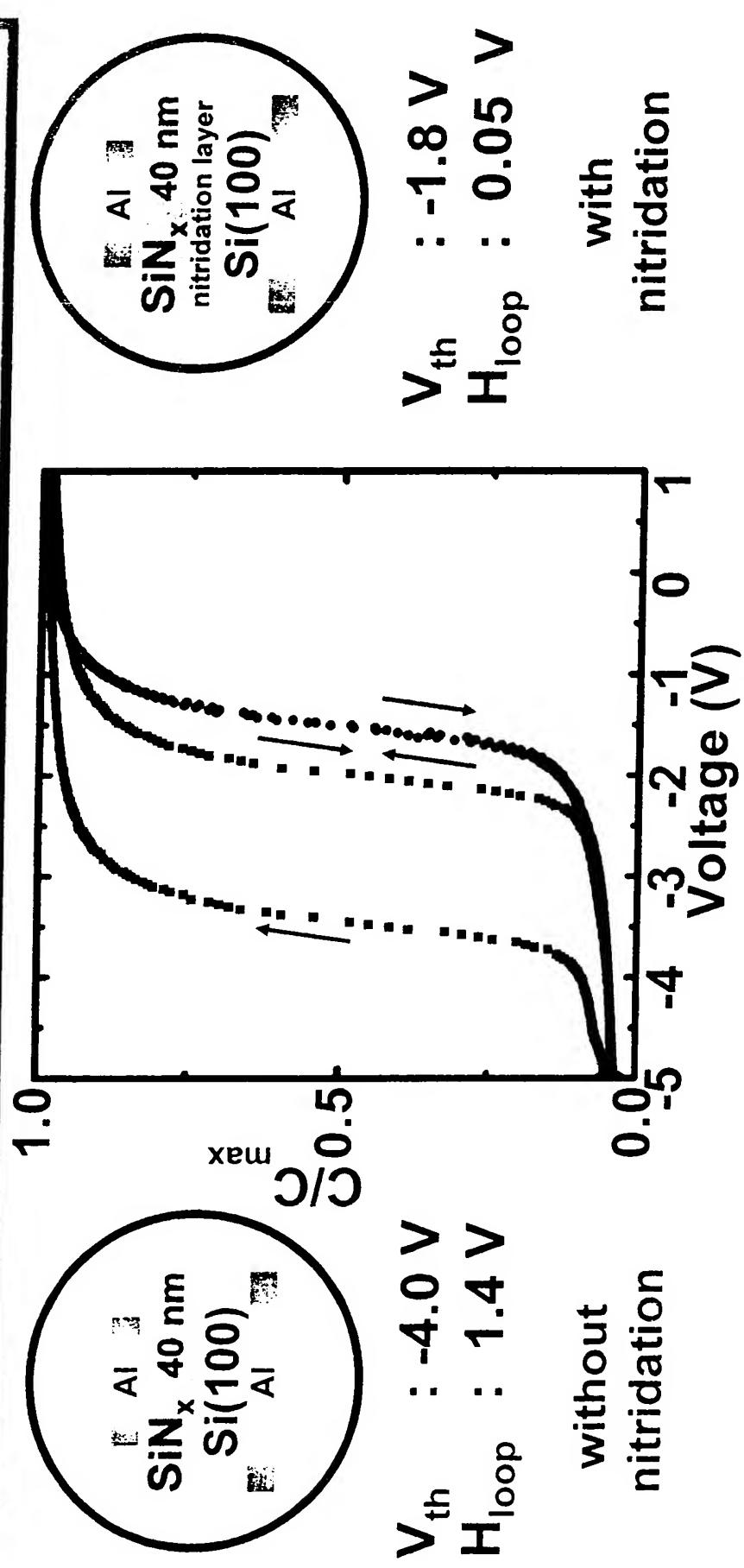


Reference Drawing 1

C-V analysis

$T_s : 250^\circ\text{C}$ $T_{\text{cat}} : 1350^\circ\text{C}$ Nitridation time: 60 s

Nitridation of Si surface before deposition of SiN_x is effective to reduce V_t shift and also width of hysteresis loop.



Reference Drawing 2

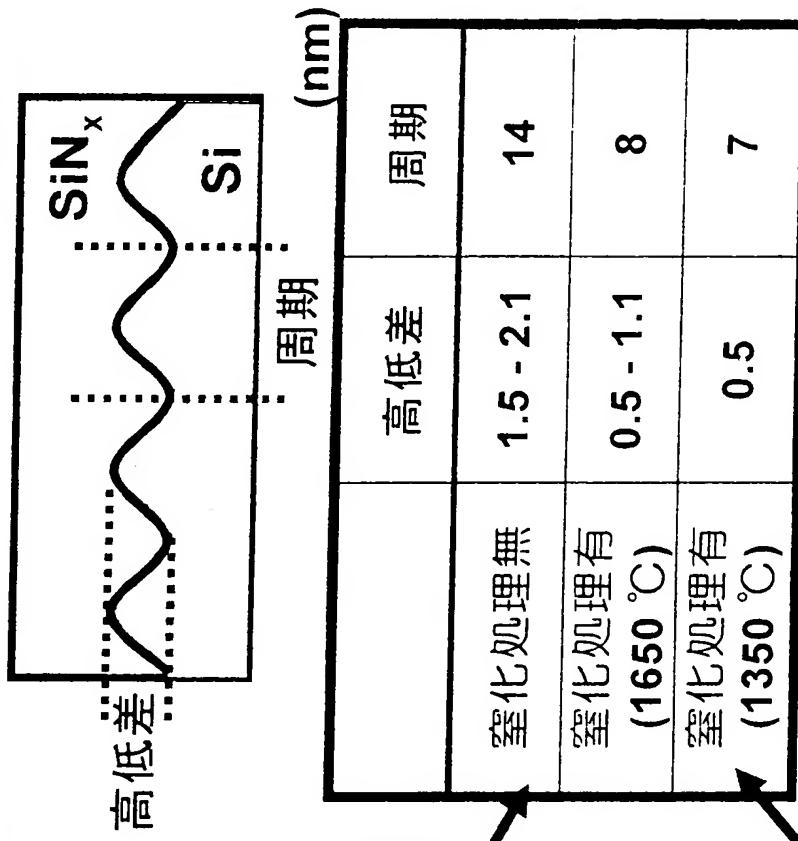
High resolution TEM image

without nitridation



with nitridation (1350 °C)

By introducing surface nitrided layer, Si/SiNx interface becomes smooth.



Reference Drawing 3